REMARKS

Favorable reconsideration is respectfully requested in view of the foregoing amendments and following remarks.

I. CLAIM STATUS AND AMENDMENTS

Kindly clarify the status of the pending and withdrawn claims. In items 4 and 4(a) on page 1 of the Office Action, claims 1-10 were incorrectly listed as pending and claims 5-10 were incorrectly listed as withdrawn. Instead, claims 1-16 are the correct pending claims and claims 5-16 are the correct withdrawn claims. Claims 11-16 were added in the Preliminary Amendment filed September 27, 2004.

Claims 1-4 have been examined on the merits and stand rejected.

Claim 1 has been amended to clarify that the antibody is produced by a hybridoma cell prepared by using human hepatocytes subcultured for at least four passages as the immunogen. Support can be found in the disclosure at page 10, lines 7-12, and in the Examples.

Claim 2 has been amended to recite the proper antecedent basis for the hybridoma cell in view of the amendment to claim 1. Support can be found in claim 2 as originally filed.

Therefore, no new matter has been added by this amendment.

II. FOREIGN PRIORITY

Kindly acknowledge the claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f), as well as receipt of the certified copies of the foreign priority document.

III. INFORMATION DISCLOSURE STATEMENT

Kindly consider and return an Examiner-initialed copy of the Form PTO 1449 submitted with the IDS of September 27, 2004.

IV. ENABLEMENT REJECTION-DEPOSIT OF MICROORGANISMS

On pages 2-3 of the Office Action, claims 2 and 4 were rejected under 35 U.S.C. § 112, first paragraph, as lacking enablement for the specifically disclosed hybridoma K8223 (FERM BP-8334).

This rejection is respectfully traversed as applied to the amended claims.

Attached herewith is deposit receipt for the Mouse-Mouse hybridoma K8223 (FERM BP-8334) as evidence that the hybridoma was deposited under the terms of the Budapest Treaty.

Pursuant to 37 CFR § 1.808, (1) access to the deposit will be available during pendency of the patent application making reference to the deposit to one determined by the Director to be entitled thereto; and (2) subject to paragraph (b) of 37 C.F.R. § 1.808, all restrictions imposed by the depositor on the availability to the public of the deposited material will be irrevocably removed upon the granting of the patent.

In view of the above, the enablement rejection of claims 2 and 4 under 35 U.S.C. § 112, first paragraph, is untenable and should be withdrawn.

V. WRITTEN DESCRIPTION REJECTION

On pages 4-7 of the Office Action, claims 1 and 3 were rejected under 35 U.S.C. § 112, second paragraph, on the basis that the specification lacks written description support for the claimed genus of antibodies that recognize proliferative human hepatocytes.

This rejection is respectfully traversed as applied to the amended claims.

To satisfy the written description requirement, a patent specification must describe the claimed invention in sufficient detail so that one skilled in the art can reasonably conclude that the inventor had possession at the time of filing of the subject matter which is claimed. See M.P.E.P. § 2163, 2100-170 to 2100-174, II, A, 3 a(i)-(ii).

This requirement may be satisfied by: (1) reduction to practice; (2) a reduction to drawings/chemical formulas; (3) a disclosure of relevant identifying characteristics, such as

structure or other physical and/or chemical properties, to sufficiently describe the claimed invention in full, clear, concise and exact terms; (4) a disclosure of functional characteristics coupled with a known or disclosed correlation between function and structure; (5) a sufficient description of a representative number of species; or (6) a combination of the above, sufficient to show Applicants were in possession of the invention. See M.P.E.P. § 2163, 2100-2170 to 2100-2174, II, A, 3 a(i)-(ii).

It is respectfully submitted that the specification satisfies this requirement and provides full written description support for the genus of claimed antibodies.

In the instant case, methods for obtaining the claimed antibody are disclosed throughout the specification. The procedures for producing a monoclonal antibody are conventional and well known in the art.

It is well established that a specification need not disclose what is well-known in the art and preferably omits that which is well-known and already available to the public. See M.P.E.P. § 2164.05(a).

As exemplified in the specification, the claimed antibody can be produced in accordance with such conventional procedures (e.g., preparation of an immunogen; immunization of animals; cell fusion; screening hybridoma cells; obtaining an antibody and purification). The specification fully describes conventional procedures and provides a working example of such an antibody on pages 10-13 and in the Examples.

For instance, in Example 1 on page 18, the specification discloses conventional procedures for obtaining and culturing human hepatocytes for at least four passages. The specification further indicates that the cultured hepatocytes exhibiting the highest proliferation ability when used as the antigen. The specification further discloses the immunization of the animals, cell fusion and screening for the hybridoma, secondary screening using the ELISA, and preparation of the antibody hybridoma cell K8223 (FERM BP-8334).

Accordingly, the claimed antibody is obtained by: (1) use of human hepatocytes subcultured for at least four passages as an immunogen; and (2) selection of hybridoma cells producing an antibody specifically recognizing proliferative human hepatocytes that exist in a hepatocyte population isolated from an adult human liver and have clonal proliferative ability and differentiation ability to functional hepatocytes.

Applicants respectfully submit that such disclosure is sufficient written description support for the claimed genus of antibodies and the claimed antibodies could not be obtained unless the procedures (1) and (2) above were used.

Such a disclosure constitutes a reduction to practice and a sufficient disclosure of relevant identifying characteristics, such as structure or other physical and/or chemical properties, to sufficiently describe the claimed invention in full, clear, concise and exact terms. Moreover, given such disclosure, one of skill in the art could easily produce and test for antibodies with the requisite ability to specifically recognize proliferative hepatocytes that exist in a hepatocyte population isolated from an adult human liver and have clonal proliferative ability and differentiation ability to functional hepatocytes. Consequently, one of skill in the art could obtain antibodies of the present invention other than those produced by hybridoma cell, Mouse-Mouse hybridoma K8223 (FERM BP-8334) by following the guidance in the disclosure for obtaining and testing antibodies with the requisite properties.

Based on this disclosure and the state of the art, one skilled in the art would reasonably conclude that Applicants were in possession of the claimed antibody.

In view of the above, the rejection of claims 1 and 3 under 35 U.S.C. § 112, first paragraph, is untenable and should be withdrawn.

VI. ANTICIPATION REJECTION

On page 7 of the Office Action, claims 1 and 3 were rejected under 35 U.S.C. § 102(b) as anticipated by Hillman (Journal Hepatology, Vol. 24, pp. 385-390, 1996).

This rejection is respectfully traversed as applied to the amended claims.

To anticipate a claim, a cited prior art reference must teach each and every element of the claimed invention. See M.P.E.P. § 2131.01.

The amended claims call for an antibody that specifically recognizes proliferative human hepatocytes that exist in a hepatocyte population isolated from an adult human liver and clonal proliferative ability and differentiation ability to functional hepatocytes, which is produced by hybridoma cell prepared by using human hepatocytes subcultured for at least four passages as an immunogen.

Again, the claimed antibody is obtained by: (1) use of human hepatocytes subcultured for at least four passages as an immunogen; and (2) selection of hybridoma cells producing an antibody specifically recognizing proliferative human hepatocytes that exist in a hepatocyte population isolated from an adult human liver and have clonal proliferative ability and differentiation ability to functional hepatocytes. Applicants respectfully submit that the claimed antibodies could not be obtained unless procedures (1) and (2) were used.

Applicants respectfully submit that Hillman fails to disclose or suggest these features of the claimed antibody. Hillman never discloses an antibody obtained from a hybridoma cell prepared by using human hepatocytes subcultured for at least four passages as an immunogen. Further, Hillman fails to disclose or suggest that an antibody that recognizes hepatocytes having clonal proliferative ability and differentiation ability to functional hepatocytes as in the claimed invention. Thus, Hillman cannot be said to anticipate the claimed invention.

In view of the above, the rejection of claims 1 and 3 under 35 U.S.C. § 102(b) is untenable and should be withdrawn.

CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that the present application is in condition for allowance and early notice to that effect is hereby requested.

If the Examiner has any comments or proposals for expediting prosecution, please contact the undersigned attorney at the telephone number below.

Respectfully submitted,

Chise MUKAIDANI et al.

By: _____

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March 7, 2006

ATTACHMENTS

1. Deposit Receipt for Mouse-Mouse hybridoma K8223 (FERM BP-8334).

[redacted]

様式１０　（第９条関係）

[特許手続上の微生物の寄託の国際的承認に関するブダペスト条約]

BUDAPEST TREATY ON THE INTERNATIONAL RECOGNITION OF THE DEPOSIT OF MICROORGANISMS FOR THE PURPOSES OF PATENT PROCEDURE

下記国際寄託当局によって規則１０．２に従い発行される。

VIABILITY STATEMENT
issued pursuant to Rule 10.2 by the INTERNATIONAL DEPOSITARY AUTHORITY identified at the bottom of this page.

生存に関する証明書

申請者
氏名（名称）　科学技術振興事業団　殿
あ て 名　〒 埼玉県川口市本町４－１－８

１．寄託者	２．微生物の表示
氏名（名称）　科学技術振興事業団 あ て 名　〒 埼玉県川口市本町４－１－８	受託番号： ＦＥＲＭ　ＢＰ－　８３３４ 受託の日： 平成１４年　３月　６日

３．生存試験の結果

２欄の微生物の生存について 平成１５年　３月２０日 に試験を実施した結果、当該微生物は、

■ 生存していた。

□ 生存していなかった。

４．生存試験に際して使用した条件（結果が否定的である場合のみ）

□ 微生物条件記録書の写し　１通

５．国際寄託当局

独立行政法人産業技術総合研究所　特許生物寄託センター

名 称：International Patent Organism Depositary
National Institute of Advanced Industrial Science and Technology

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平成１５年（２００３）　３月３１日

国際様式　INTERNATIONAL FORM

[特許手続上の微生物の寄託の国際的承認に関するブダペスト条約]

BUDAPEST TREATY ON THE INTERNATIONAL RECOGNITION OF THE DEPOSIT OF MICROORGANISMS FOR THE PURPOSES OF PATENT PROCEDURE

下記国際寄託当局によって規則７．１に従い発行される。

RECEIPT IN THE CASE OF AN ORIGINAL DEPOSIT

issued pursuant to Rule 7.1 by the INTERNATIONAL DEPOSITARY AUTHORITY identified at the bottom of this page.

原寄託についての受託証

氏名（名称）　科学技術振興事業団　殿

寄託者

あ て 名　〒 埼玉県川口市本町４－１－８

１．微生物の表示

（寄託者が付した識別のための表示）	（受託番号）
Mouse−Mouse hybridoma K8223	FERM BP− 8334

２．科学的性質及び分類学上の位置

１欄の微生物には、次の事項を記載した文書が添付されていた。

■ 科学的性質
■ 分類学上の位置

３．受領及び受託

本国際寄託当局は、平成１４年　３月　６日（原寄託日）に受領した１欄の微生物を受託する。

４．移管請求の受領

本国際寄託当局は、平成１４年　３月　６日（原寄託日）に１欄の微生物を受領した。
そして、平成１５年　３月２０日に原寄託よりブダペスト条約に基づく寄託への移管請求を受領した。
（平成１４年　３月　６日に寄託されたＦＥＲＭ　Ｐ－　１８７５２　号より移管）

５．国際寄託当局

独立行政法人産業技術総合研究所　特許生物寄託センター

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平成１５年（２００３）　３月２０日